

# REGIONAL LEADERSHIP



*Transcending Boundaries*



# GLOBAL INFLUENCE

## 2014 ANNUAL REPORT

**Through innovations in energy and environmental policies, programs, and technologies, the Southern States Energy Board enhances economic development and the quality of life in the South.**



**[www.sseb.org](http://www.sseb.org)**

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# MESSAGE FROM THE CHAIRMAN

As the Southern States Energy Board (SSEB) celebrates its 54th year of service to the southern states and territories, I am pleased to report that the board continues its commitment to excellence, representing its members on issues affecting energy policy, environmental integrity, science, and technology development and deployment. The board continues to lead major projects that are enhancing economic development and the quality of life in the southern region.

My theme for our 54th Annual Meeting is “**Regional Leadership – Global Influence**,” which focuses on the role of southern states in leading the nation toward international energy partnerships. The meeting also will highlight opportunities for energy exports and imports as well as new energy technologies that impact the way we utilize energy resources. Today, America is competitive with other energy producing nations and is expected by 2020 to lead the world in oil and natural gas production. Our energy wealth is a major factor in the resurgence of the economy, job creation, and a sustainable and enhanced lifestyle.

In 2013 at a meeting of the SSEB, Governor Phil Bryant of Mississippi and I signed a historic Memorandum of Understanding (MOU) to pursue the development of oil sands across our states. Oil sands of Mississippian Age are exposed at the surface in north-central and northwest Alabama and extend along a 70-mile belt that crosses into Tishomingo County, Mississippi. The potential for future oil extraction warrants further analysis and consideration. Scientists, engineers, and legal experts from SSEB, the Geological Survey of Alabama (GSA) and the State of Alabama Oil and Gas Board (OGB), and the Mississippi Oil and Gas Board are working together with government and industry partners to develop a comprehensive resource assessment and regulatory framework to support this future industry. The total subsurface reserves are estimated to be 7.5 billion barrels, with 350 million barrels located within 50 feet of the surface.

Earlier this year, I established the Alabama Oil Sands Program at the GSA and the OGB of Alabama. Through this program, we are making great progress in understanding and characterizing Alabama's oil sands resources. We also are creating a regulatory

framework that will allow for the development of these resources in a manner that benefits our economy while protecting our citizens and the environment. We stand ready to work with our neighbors in Mississippi to realize the potential of our joint MOU.

Our MOU is enhanced by international cooperation through the Office of the Consulate General of Canada. In the spirit of knowledge sharing, Canada's Province of Alberta has provided tours of Canadian oil sands operations for SSEB members to study the technical and policy issues inherent in energy resource development.



The Southeast Regional Carbon Sequestration Partnership (SECARB), managed by SSEB, continues to support the U.S. Department of Energy's (DOE) Carbon Storage Program by demonstrating new and innovative technologies for reducing carbon dioxide (CO<sub>2</sub>) emissions from large, stationary sources. Currently, there are two SECARB large-scale CO<sub>2</sub> storage projects underway; the Early Test in Cranfield, Mississippi, and the Anthropogenic Test in Bucks, Alabama.

SECARB has received international and domestic attention and recognition for leadership in advancing the commercialization of CO<sub>2</sub> storage technologies. In November 2013, SECARB's Anthropogenic Test was recognized by the international Carbon Sequestration Leadership Forum. Southern Company's 25-megawatt CO<sub>2</sub> capture project at Alabama Power's Plant Barry, constructed to support SECARB, was inducted into the Alabama Engineering Hall of Fame in 2013. In June 2014, the project also received the Chairman's Award in the Southeastern Electric Exchange 2014 Industry Excellence Awards Program that honors the "Best of the Best" projects.



In February 2014, I sent a letter to the U.S. Environmental Protection Agency's (EPA) Administrator, Gina McCarthy, asking EPA to carefully consider the costs and time constraints imposed on states when setting greenhouse gas emissions targets for fossil fuel power plants. The letter urged EPA to give each state the flexibility to address the unique characteristics of its energy infrastructure, and it emphasized the importance of maintaining a reliable, affordable power supply. EPA's proposed rule was published in early June. The deadline for states' compliance with emissions targets can be extended, according to the rule, if states choose to enter into a regional plan. SSEB is pleased to assist if states elect to pursue a regional approach.

The South, home to 44 percent of America's nuclear electric energy generation, continues its national leadership role, including four new units under construction in Georgia and South Carolina and one unit being completed in Tennessee. Because nuclear generation is so prevalent in the region, SSEB maintains regional committees to address radioactive materials transportation. The temporary closure of the Waste Isolation Pilot Plant (WIPP) and the subsequent suspension of shipments have been major issues associated with the transport of transuranic (TRU) waste through our region. The WIPP facility made national headlines in February because of an equipment fire that occurred in the underground repository and an alarm that indicated a radiation release a few days later. These two separate occurrences have caused the states in our region that are a part of the TRU shipping corridor to shift their focus from shipment support activities to training initiatives.

DOE's Office of Nuclear Energy (DOE-NE) continues to work with our states to develop a national program for the management and disposal of commercially used nuclear fuel and high-level radioactive waste. DOE-NE has employed the board's Radioactive Materials Transportation Committee to help finalize the implementation of Section 180(c) of the Nuclear Waste Policy Act. Other tasks associated with this project include the development of a National Transportation Plan and the evaluation of a new routing software application.

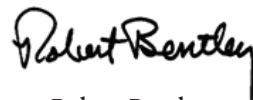
New coal-fired power plants in the region are employing innovative technologies to capture CO<sub>2</sub> and reduce greenhouse gas pollution. The Kemper County power plant in Mississippi uses an integrated gasification combined cycle design called TRIG™ technology, which was developed over the last two decades at the Power Systems Development Facility in Alabama.

The Appalachian region is characterized by its reliance on the conservation, exploration, and utilization of natural resources. Its economic stability is based on a program that enables resurgence and redevelopment inside the region. Executive and legislative leaders have requested that SSEB play a role in setting a vision for a new, cooperative model that promotes a collective resource base and takes advantage of innovative energy and environmental solutions.

The Appalachian Regional Redevelopment Coalition has developed an "Energy Farms" model concept for the region, which would include processing centers and provide for a diversity of energy production and value-added enterprises. The centers would be comprised of modular, stacked systems that produce solid (carbon neutral, biomass) fuels, clean liquid transportation fuels, biofuels, chemicals, and electricity to power the centers and supply energy to the regional grid. The centers would be designed to enrich and rebuild soil structure, clean the water, capture potential pollutants and byproducts, and recycle or sell commodities such as CO<sub>2</sub>.

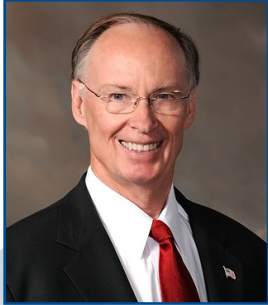
The *Southern States Regional Energy Profiles 2014* document provides an overview of the changing patterns of energy consumption across the South and their impacts on energy independence, reliability, security, and economic growth. I commend this updated report and encourage you to utilize it as a resource on energy issues.

The southern region has much to offer the world in energy production, new technologies, creative concepts for efficiency, and models for business innovation. SSEB is a vehicle that enables states to work together to solve energy and environmental issues that transcend traditional boundaries. It is my pleasure to serve as Chairman of this esteemed organization and to submit our 2014 Annual Report for your review.

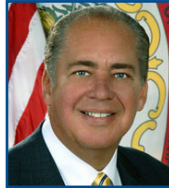


Robert Bentley  
Governor of Alabama  
Chairman

# SSEB EXECUTIVE COMMITTEE



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Robert Bentley**  
Alabama  
*Chairman*



**Governor  
Earl Ray  
Tomblin**  
West Virginia  
*Chairman-Elect*



**Representative  
Rocky Adkins**  
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*Vice-Chairman*



**Representative  
Myra  
Crownover**  
Texas  
*Treasurer*



**Governor  
Mike Beebe**  
Arkansas



**Governor  
Phil Bryant**  
Mississippi



**Senator  
Robert Adley**  
Louisiana



**Representative  
Harry  
Geisinger**  
Georgia



**Senator  
Mark Norris**  
Tennessee



**Representative  
Weldon  
Watson**  
Oklahoma



**Honorable  
Jim Powell**  
*Federal  
Representative*



**Representative  
William E.  
Sandifer**  
South Carolina  
*Chair, SLC  
Energy  
& Environment  
Committee*



**Mr. Kenneth J.  
Nemeth**  
SSEB  
*Secretary &  
SSEB Executive  
Director*

# SSEB BOARD MEMBERS

## Alabama

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Senator Cam Ward, Senate Alternate  
Representative Randy Davis  
Representative Howard Sanderford, House Alternate  
Representative Micky Hammon, Governor's Alternate

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Senator Eddie Joe Williams  
Senator Bobby J. Pierce, Senate Alternate  
Representative Sue Scott  
Mr. Marc Harrison, Governor's Alternate

## Florida

Governor Rick Scott  
Senator Anitere Flores  
Representative Jose Felix Diaz

# SSEB BOARD MEMBERS

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Senator Jack Murphy, Senate Alternate  
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Representative Lynn Smith, House Alternate  
Ms. Jill Stuckey, Governor's Alternate

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Senator Brandon Smith  
Senator Jared Carpenter, Senate Alternate  
Representative Rocky Adkins  
Representative Jim Gooch, Jr., House Alternate  
Dr. Leonard K. Peters, Governor's Alternate

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Senator Robert Adley  
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Representative Joe Harrison  
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Commissioner Scott Angelle, Governor's Alternate

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Delegate Dereck E. Davis  
Delegate Sally Y. Jameson, House Alternate

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Senator Sean Tindell, Senate Alternate  
Representative Gary Staples  
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Representative Mike Hager  
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Senator Bryce Marlatt, Senate Alternate  
Representative Weldon Watson  
Representative Josh Cockroft, House Alternate  
Secretary Michael Teague, Governor's Alternate

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Senator John C. Watkins  
Senator John S. Edwards, Senate Alternate  
Senator Frank W. Wagner, Senate Alternate  
Delegate Will Morefield

## West Virginia

Governor Earl Ray Tomblin  
Senator Douglas E. Facemire  
Senator Art Kirkendoll, Senate Alternate  
Delegate Linda Goode Phillips  
Delegate Brent Boggs, House Alternate  
Mr. John F. Herholdt, Governor's Alternate

*Roster of SSEB Board Members is current as of September 1, 2014.*

# SSEB ASSOCIATE MEMBERS

## 2013 - 2014 OFFICERS



**Chairman**  
Mr. Randy Eminger  
American Coalition for  
Clean Coal Electricity  
(ACCCE)



**Vice Chairman**  
Mr. Mike McGarey  
Nuclear Energy  
Institute (NEI)



**2nd Vice Chairman**  
Mr. Rudy Underwood  
American Chemistry  
Council



**Immediate Past  
Chairman**  
Mr. James Burwell  
SCANA Corporation

*SSEB's Associate Members program is comprised of industry partners who provide an annual contribution to the Board. Membership includes organizations from the non-governmental sector, corporations, trade associations, and public advocacy groups. The Associate Members program provides an opportunity for public officials and industry representatives to exchange ideas, define objectives, and advance energy and environmental planning to improve and enhance the quality of life in the South.*

Alpha Natural Resources

America's Natural Gas Alliance

American Coalition for Clean Coal  
Electricity

American Electric Power

American Chemistry Council

Arch Coal, Incorporated

Charah, Incorporated

Chevron Corporation

Clean Line Energy Partners, LLC

Coal Utilization Research Council

Coalition for Fair Energy Codes

Dominion

Duke Energy

Edison Electric Institute

Entergy Services, Incorporated

Exxon Mobil Corporation

ITC Holdings Corp.

Koch Companies Public Sector, LLC

MagneGas Corporation

National Coal Council

National Mining Association

National Rural Electric  
Cooperative Association

Nuclear Energy Institute

Peabody Energy

Phillips 66

South Carolina Public Service  
Authority/Santee Cooper

SCANA Corporation

Shell Oil Company

Southern Company

TECO Services, Incorporated

Tennessee Valley Authority

Troutman Sanders, LLP

Virginia Center for Coal &  
Energy Research

Virginia Coal and Energy Alliance

WVU Research Corporation

# PROGRAMS

The Southern States Energy Board operates and oversees a wide variety of energy and environmental programs.

Program topics from water use to carbon dioxide storage, biomass to nuclear waste transportation, legislative and regulatory action to energy independence and security, just to name a few, all fall under the purview of SSEB. The following pages detail our leadership, activities, and research in these areas.

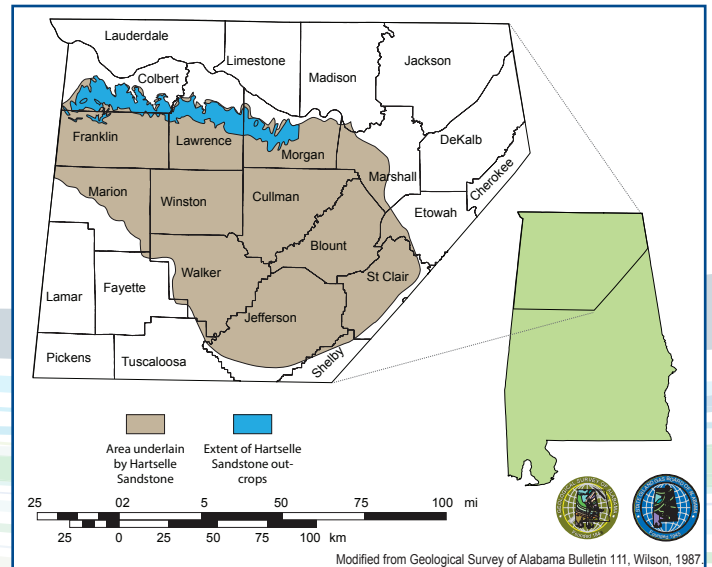


# ALABAMA/MISSISSIPPI OIL SANDS COMPREHENSIVE RESOURCE ASSESSMENT

The Southern States Energy Board, Geological Survey of Alabama, Mississippi Development Authority, and Mississippi Department of Environmental Quality are conducting a comprehensive resource assessment of oil sands located in Alabama and Mississippi. Oil sands generally occur as natural mixtures of sand, clay, water, and bitumen, a heavy oil. When extracted from the subsurface, the bitumen is separated from the sand and upgraded to a refinery-ready crude oil. Alabama has the third largest oil sands resource in the United States. Mississippian age oil sands crop out in north-central and northwest Alabama at various locations dispersed throughout a 70-mile belt that extends into northeastern Mississippi. Based on evaluations in the 1980s, the total subsurface reserves are estimated to be 7.5 billion barrels.

The largest commercial oil sands operations are ongoing in the Canadian Province of Alberta. On December 10-14, 2012, the Canadian Consulate General's Office in Atlanta and the Government of Alberta hosted a delegation of eight SSEB members and geologists in Edmonton and Fort McMurray. The delegation participated in this fact-finding mission to better understand the oil sands resources of Alberta, technologies utilized to extract the resource, environmental concerns, regulatory and permitting processes, and the economic impact of developing these resources.

Alabama Governor Robert Bentley and Mississippi Governor Phil Bryant jointly signed a Memorandum of Understanding on July 27, 2013, in Mobile, Alabama, recognizing that a partnership between the states, the energy industry, and major utilities can have a positive impact on the successful exploration for, and development of, these resources. The MOU asserts the governors' support of conducting a comprehensive resources assessment of the oil sands deposits in Alabama and Mississippi.



*Location of Alabama oil sands (courtesy of the Geological Survey of Alabama).*

# CARBON MANAGEMENT: THE SOUTHEAST REGIONAL CARBON SEQUESTRATION PARTNERSHIP

The Southeast Regional Carbon Sequestration Partnership (SECARB) is a program underway at the Southern States Energy Board to balance the environmental effects of existing and prospective fossil fuel powered electric generating facilities. SECARB is one of seven Regional Carbon Sequestration Partnerships (RCSPs) nationwide funded by the U.S. Department of Energy's National Energy Technology Laboratory (NETL) and cost sharing partners. The primary goal of the SECARB Partnership is to promote development of a framework and infrastructure necessary for the validation and deployment of carbon dioxide (CO<sub>2</sub>) capture and storage (CCS) technologies.

Key to the success of any CCS project is an operator's ability to predict and monitor the flow of CO<sub>2</sub> molecules injected into the subsurface and to communicate this information to stakeholders and regulators. The SECARB Early Test has been underway since 2009 at an active CO<sub>2</sub>-enhanced oil recovery operation in the Cranfield oilfield near Natchez, Mississippi. The SECARB team is field testing and validating a variety of CO<sub>2</sub> monitoring, verification, and accounting (MVA) technologies to determine their commercial viability in a CO<sub>2</sub> injection setting. This project was the first of the RCSPs to begin CO<sub>2</sub> injection and the first to monitor a one million metric ton injection.

***As of August 2014,  
the SECARB team has  
monitored the injection  
of over 10 million  
metric tons of CO<sub>2</sub>.***

Data collected at Cranfield is utilized by the SECARB team and researchers worldwide to further refine reservoir models for similar geologic settings. In 2010, the international Carbon Sequestration Leadership Forum recognized the Early Test project at Cranfield for its outstanding accomplishments in advancing CCS MVA technologies.



***SECARB offers a tour of the Water Research Center at Southern Company's Plant Bowen as part of its annual Stakeholders' Briefing on March 5, 2014.***



Knowledge gained from the Early Test is being applied at the Anthropogenic Test site in Alabama, where CO<sub>2</sub> injection began on August 20, 2012. This accomplishment marks another significant milestone for the team as it operates the world's largest fully integrated CO<sub>2</sub> capture, transportation, and injection project utilizing anthropogenic (man-made) CO<sub>2</sub> from a coal-fired power plant. Under separate funding, the CO<sub>2</sub> is captured at Alabama Power Company's James M. Barry Electric Generating Plant located in Bucks, Alabama. The CO<sub>2</sub> is transported 12 miles by pipeline and permanently stored within a deep saline formation at the Citronelle oilfield operated by Denbury. More than 100,000 metric tons of CO<sub>2</sub> have been injected and stored at the site. The SECARB partners have deployed proven and experimental MVA technologies to monitor CO<sub>2</sub> movement in the subsurface during and post-injection. In November 2013, the international Carbon Sequestration Leadership Forum recognized the Anthropogenic Test project at Citronelle for its outstanding accomplishments in advancing CCS technologies.



*Norwegian and U.S. officials tour the SECARB Anthropogenic Test CO<sub>2</sub> capture facility and Citronelle storage site on April 25, 2014.*

Through a “Knowledge Sharing” activity established in 2011, the SECARB partners are facilitating interaction among scientists, researchers, and industry during which lessons learned from CCS projects around the globe are shared to further advance the technologies. During this year, SSEB and its SECARB partners have participated in several international workshops on the topics of MVA technologies and risk management protocols. In addition, several SECARB partners are serving as members of the U.S. Technical Advisory Group, approved by the American National Standards Institute, to mirror the International Organization for Standardization (ISO) Technical Committee (TC)-265 effort for the development of guidance and standards for carbon capture, transportation, and geological storage. Participation in this endeavor will ensure that the ISO process is both technically sound and the U.S. consensus position is represented.

***SECARB team members represent the U.S. and share CCS knowledge and expertise by serving on the U.S. Technical Advisory Group to the ISO Technical Committee for developing guidance and standards for CCS.***

SECARB continues to characterize the region's onshore and offshore geologic storage options; monitor federal and state regulatory and legislative activities; and support education and outreach efforts related to the program. Please visit the SECARB website at [www.secarbon.org](http://www.secarbon.org) for the current status of our projects and related activities, upcoming meetings and workshops, social media subscriptions, and more.

# SOUTHEAST REGIONAL CARBON SEQUESTRATION TECHNOLOGY TRAINING PROGRAM

Carbon capture, utilization, and storage (CCUS) technologies have tremendous potential for reducing carbon dioxide (CO<sub>2</sub>) emissions and mitigating global climate change. These technologies encourage economic growth and have manageable influence on energy use. Deploying these technologies on a commercial scale will require expanding the workforce, to include geologists, engineers, scientists, and technicians, that are trained in CCS specialties.



In 2009, the U.S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL) selected seven projects to help develop regional sequestration technology training centers in the United States. The "Southeast Regional CO<sub>2</sub> Sequestration Technology Training Program" (SECARB-Ed) was managed and administered by the Southern States Energy Board (SSEB) from November 16, 2009, to November 15, 2012. During this performance period the efforts of SECARB-Ed and partners resulted in a total of 1,951 professional development hours (PDHs) awarded to 1,131 participants.

In a second initiative, SSEB proposed continuing its in-house elements of the SECARB-Ed program under the DOE's Office of Clean Coal and Carbon Mangement, Division of CCS Demonstrations.

In 2009, SSEB partnered with Entech Strategies to co-sponsor the Research Experience in Carbon Sequestration (RECS), a premier CCS education and training forum in the United States. The intensive 10-day program combines classroom instruction with group exercises, site visits, and field activities and covers the science, technology, policy, and business topics associated with CCS deployment. The SSEB staff and the SECARB Anthropogenic Test partners have served as faculty and hosted the RECS program in Alabama in 2011, 2012, 2013, and 2014.

***This year's highlights include collaboration between EnTech Strategies, SECARB-Ed, Southern Company, and the CCUS Research Coordination Network to support the Research Experience in Carbon Sequestration in Birmingham, Alabama, on June 1-10, 2014.***

SECARB-Ed staff participated in outreach and web presence in support of the Eastern Coal Council's Coal to Electricity project for teachers in Wise, Virginia, on July 20-26, 2014. This program augments and supports fourth through sixth grade, with earth science standards of learning relating to non-renewable resources.

# CLEAN COAL AND ENERGY TECHNOLOGIES COLLABORATION

Southern States Energy Board's Committee on Clean Coal and Energy Technologies Collaboration is a regional effort to advance opportunities for applied research and development, investment, international cooperation, and technology design for coal in the South, coupling the development of clean coal technologies with potential economic development. Working through member governors and state legislators, the committee seeks to communicate the importance of coal as a key economic resource through the development of state legislative and regulatory policies.

SSEB maintains a productive partnership with the Department of Energy's (DOE) Office of Fossil Energy and is featured in national events including the Pittsburgh Coal Conference and the Annual Carbon Capture and Storage Conference. International efforts, such as participation in the 24-nation Carbon Sequestration Leadership Forum, are coordinated with the Clean Fossil Fuel Systems Committee of the World Energy Council and the United States Energy Association.



*SSEB Federal Representative Jim Powell and Representative Howard Sanderford of Alabama at the 2014 Committee on Clean Coal and Energy Technologies Collaboration meeting.*

The committee met on May 20-21, 2014, in Kingsport, Tennessee. On May 21st, during the concluding portion of the meeting, the committee divided its discussion into two portions. The first portion focused on the issues surrounding innovation, technology, and growth. The second portion of the committee's discussion concentrated on significant current and impending regulatory challenges faced by states, utilities, and industry.

Outcomes of the roundtable discussion included stated intentions by several Southern States Energy



Board (SSEB) legislative members to bring resolutions before the Southern States Energy Board at its annual meeting in late September of 2014. Additionally, committee members provided assurances that the key issues and priorities highlighted during the discussion would be brought forth during meetings with governors' offices, legislative leadership, state regulators, and other related national and regional organizations.

Priorities under consideration and discussion during this year include: funding for DOE's Office of Fossil Energy and the National Energy Technology Laboratory; ensuring the ability of utilities to obtain financing for coal electric generating units; addressing regulatory framework gaps; finding commercially beneficial uses for CO<sub>2</sub>; monetary and regulatory incentives for carbon capture and storage and enhanced oil recovery; DOE/EPA cooperation to develop a comprehensive list of acceptable clean coal technologies; prioritizing grid reliability in the South; reasonable timelines for regulatory compliance under new EPA regulations; and recognizing state primacy on power plant emission standards.

The committee issued strong support for Governor Robert Bentley's February 19, 2014, letter to EPA Administrator McCarthy regarding greenhouse gas guidelines for new and existing fossil fueled power plants.



*Kenneth Nemeth of SSEB, Gene Kight of U.S. DOE, Kimberly Sams of SSEB, and Alex Wargo of U.S. DOE visit and tour the SSEB/SECARB Anthropogenic Test project sites, including the Alabama Power CO<sub>2</sub> capture facility in Bucks, Alabama.*



*Joe GIOVE, U.S. DOE, expounds on the department's partnerships in support of CCS technology demonstration projects.*

# TRANSURANIC WASTE TRANSPORTATION



*Students undergo moulage process to simulate accident victims as a part of the WIPPTREX in Andrews, Texas.*



*State personnel establish a decontamination station on the site of the accident during the Texas WIPPTREX.*

SSEB's Transuranic Waste Transportation (TRU) Working Group assists with the removal of Cold War era bomb making containments from sites throughout the DOE complex. The radiological health professionals and emergency response personnel who comprise the group are responsible for making sure shipments of transuranic waste pass safely through the southern region enroute to their final disposal at the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. This national campaign, which has been a model for how to effectively conduct safe routine transportation, was suspended in February 2014 due to two incidents that

occurred at the site. The first incident involved a fire on a vehicle used to transport salt in the underground mine. The second took place a few days later when a continuous air monitor detected airborne radiation in the underground. An initial accident report on the fire revealed that flammable liquids in the engine compartment contacted a hot surface which resulted in the blaze. In regard to the minor radiation release, it has been speculated that the waste contents of a barrel caused pressure to build and rupture the lid. As a result of these unrelated incidents, the WIPP site has temporarily ceased all disposal operations to conduct a thorough investigation and focus on remediation efforts.

Without shipping activity planned for the near future, SSEB's TRU corridor states have transitioned their work toward preparedness and training efforts. Utilizing the \$1 million dollar funding allocation that SSEB negotiated through the Carlsbad Field Office on their behalf, states have embarked upon conducting drills and exercises. This strategy has kept first responders engaged and ready to support shipments from the Oak Ridge National Laboratory (ORNL) in Tennessee and the Savannah River Site (SRS) in South Carolina. A WIPPTREX is one such training initiative that allows states to test the level of preparedness of emergency personnel in the event of an accident involving TRU waste. The state of Texas held a WIPPTREX in Andrews, Texas, in early April to demonstrate their ability to effectively coordinate a joint response of local, state, and federal assets. A WIPPTREX is planned to take place in Ruston, Louisiana, on October 9, 2014, to test similar objectives.

# FOREIGN RESEARCH REACTOR SPENT NUCLEAR FUEL SHIPMENTS

The mission of the National Nuclear Security Administration's Global Threat Reduction Initiative (GTRI) is to reduce and protect vulnerable nuclear and radiological material located at civilian sites worldwide. The history of this policy originates with the "Atoms for Peace" program which was a U.S. policy from the 1940's that encouraged foreign countries to use nuclear technology for research and medical purposes as opposed to military applications. The Southern States Energy Board has been involved over the past two decades in implementing this non-proliferation objective by coordinating the planning efforts associated with the return of shipments of used nuclear fuel from foreign countries. Based upon the composition of the fuel, the shipments will be destined for either the Savannah River Site (SRS) or the Idaho National Laboratory (INL). For those shipments being transported to the SRS facility in the southern region or cross-country to INL, SSEB relies on the expertise of its radioactive materials committee members to aid in the development of a safe, efficient, and effective transportation campaign.

During SSEB's association with this project, a majority of shipments from 31 countries have been returned domestically through the Joint Base Charleston-Weapons Station in North Charleston, South Carolina. In the very near future, a substantial number of shipments are expected to be transported from Canada to SRS before the return aspect of the GTRI program concludes in 2019.



*Left: Casks of highly enriched uranium (HEU) used nuclear fuel being loaded for transportation from Latvia to a nearby port. Above: Type B shipping package containing used nuclear fuel is properly secured for transport.*



# SOUTHERN EMERGENCY RESPONSE COUNCIL



*Mark Wyland, Georgia Emergency Management Agency WIPP Coordinator, participates in an exercise to find a radiological source.*

The Southern Emergency Response Council (SERC) is a committee responsible for the administration of a mutual aid agreement formalized by 14 southern governors in 1972 to offer state-to-state assistance in the case of a radiological incident involving a nuclear power plant. The SERC signatory states include: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

The actual document which identifies how the procedures would be conducted in the event of such an emergency is the Southern Mutual Radiation Assistance Plan or SMRAP. Created as a blueprint for coordinating radiological emergency assistance capabilities among participating states in the southern region, SERC representatives review, revise, and administer SMRAP on an annual basis to reflect changes in state emergency response capabilities and equipment. This document outlines the mutual aid agreement, the implementation process, emergency response contacts, and available state resources.

As a part of the scope of this endeavor, SSEB acts as regional

coordinator to simulate the activation of the SMRAP during state nuclear power plant exercises. In the past year, the states of Georgia and North Carolina issued a courtesy notification during their drills, but did not request SMRAP activation.

A SERC meeting is held once per year in conjunction with the Organization of Agreement States meeting. This gathering allows members the opportunity to discuss matters related to SMRAP. The group met recently on August 25, 2014, in Chicago, Illinois, to ratify the current edition of SMRAP.



*Staged accident scene at the April 2014 Radiation Specialist Course in Lexington, Kentucky.*



# RADIOACTIVE MATERIALS TRANSPORTATION

The Radioactive Materials Transportation Committee is the vehicle the board utilizes to develop regional policies and procedures for the design of a national transportation program for used nuclear fuel and high-level radioactive waste. These gubernatorially appointed state emergency response planners, radiological health officials, and other state agency professionals work with DOE's Office of Nuclear Energy/Nuclear Fuels Storage Transportation (NFST) and Planning Project to bring this goal to fruition.

Most recently, the board was able to use funding provided by a four-year cooperative agreement with NFST to sponsor a Radiation Specialist Course in Lexington, Kentucky, on April 14-18, 2014. This joint collaboration with the DOE-Transportation Emergency Preparedness Program allowed SSEB to offer this advanced level training to 45 individuals within the region. The course, which raised the preparedness level of first responders, received positive reviews both for its value and technical expertise. Several member states who sent representatives have expressed an interest to host the course in the near future.

In May of 2014, the committee held its Spring Meeting in conjunction with DOE's National Transportation Stakeholders Forum in Bloomington, Minnesota. During this meeting, they worked with their regional counterparts to begin crafting a National Transportation Plan to provide a framework and operational strategies for conducting nation-wide radioactive materials shipping campaigns. Other areas of interest from the forum included advances in transportation information systems, enhancements to shipment security, and using social media to educate and inform responders and the public about hazards. Committee members renewed their work on Section 180(c) of the Nuclear Waste Policy Act to devise an approach on how best to provide states with training and technical assistance for shipments that would traverse their jurisdiction. The South will host a gathering of the Section 180(c) Interregional Team, which is tasked with resolving specific areas of the overall policy, in October 2014.



*Radiation Specialist class attendees receive a briefing about portable radiation monitors.*

# ENERGY AND ENVIRONMENT LEGISLATIVE PRIORITIES AND ANALYSIS



*Kentucky Representative Rocky Adkins, SSEB Vice-Chairman, speaks to attendees at the Legislative Briefing in Little Rock, Arkansas, in July 2014.*

The Southern States Energy Board's Annual Legislative Digest serves as a compendium of energy and environmental legislation passed by the board's 18 member states and territories. For more than four decades, SSEB has published the digest as a reference tool and guide for state legislators and their staffs. The digest thoroughly examines and tracks legislative trends state by state.

As technology advances in the oil and natural gas industries, SSEB member states continue to address issues surrounding natural gas and petroleum development. Within the digest, there are many bills relating to pipeline and infrastructure development, severance taxes, and landowner notification, as well as the rapidly emerging market for compressed and liquefied natural gas vehicles. States rich in oil and gas resources are tackling the potential environmental, economic, and social impacts arising from exploration and pipeline activities. Our member states continue to address infrastructure and regulatory challenges as the South's oil and gas resources help lead the way to American energy independence.

*During the 2014 legislative sessions, the southern states passed over 500 energy and environmental bills.*



*State Representatives Rocky Adkins (KY), Angela Cockerham (MS), Bill Sandifer (SC), and John Ragan (TN) participate on the legislative panel at SSEB's 53rd Annual Meeting on October 14, 2013, in Biloxi, Mississippi.*

As the South continues to experience tremendous growth, a majority of SSEB member states passed bills related to inland water resource management and conservation. States continue to provide responsible, thoughtful environmental leadership as five SSEB member states enacted statutory measures related to implementation of the President's Climate Change Plan. Finally, SSEB member states addressed important economic development goals and quality of life issues through legislation related to energy efficiency; incentives to support the development of renewable energy enterprises and economic zones; and guidelines to ensure safe excavation practices near underground utilities and pipelines.

# PARTNERSHIPS

The Southern States Energy Board has many collaborative efforts underway and through these robust partnerships with government, business, industry, and academia, SSEB benefits from the expertise of energy and environmental leaders across the country.

The core of this strategy lies in the board's associate members who represent the region's and nation's leading energy providers, resource companies, educational institutions, and technology developers.

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The core of this strategy lies in the board's associate members who represent the region's and nation's energy providers, resource companies, educational institutions, and technology developers. The SSEB associate members program was founded in 1984 by Governor John Y. Brown of Kentucky when he was the organization's chairman.

The associate members act in an advisory capacity to the board. With increasing interest from the region's prominent energy industries and organizations, SSEB gains a broad depth of knowledge and diverse perspectives on the impact of energy and environmental policies on the region's economy.

Through another collaborative effort with the U.S. Department of Energy's Office of Fossil Energy and the U.S. Energy Association, the board became a founding stakeholder in the Carbon Sequestration Leadership Forum (CSLF) in 2003. The policy and technical forums of CSLF further international cooperation and understanding of carbon dioxide capture, utilization, and storage; legal and regulatory issues; intellectual property; and myriad related matters. The CSLF recognized SSEB's SECARB Partnership as an international program of excellence.



*Randy Eminger, American Coalition for Clean Coal Electricity, and Mike McGarey, Nuclear Energy Institute, leaders of SSEB's associate members program, confer during the summer meeting in Little Rock, Arkansas.*



# PARTNERSHIPS



***Arkansas Public Service Commissioner Olan “Butch” Reeves addresses the SSEB associate members during the summer meeting in Little Rock, Arkansas.***

On a national level, SSEB is an affiliate member of the National Association of State Energy Officials (NASEO). In this relationship, SSEB works closely with state energy office directors in the southern region on a wide array of programs, ranging from energy efficiency, low-income home energy assistance, weatherization, and energy security and infrastructure.

To foster regional cooperation and collaboration, the board continues a strong working relationship with other regional organizations such as the Southern Governors’ Association, the Southern Legislative Conference, the

Virginia Coal and Energy Alliance, and the Southeast Energy Efficiency Alliance. SSEB strives to foster on-going relationships with other regional and state organizations with similar goals.

These are only a few examples of the collaborative relationships SSEB experiences through its diverse partnerships. Building partnerships is an essential goal of the board in order to leverage opportunities and expand its expertise to assist its member states. These collaborations allow SSEB to increase its program and financial commitments to the benefit of the entire southern region.

# EDUCATING STAKEHOLDERS

While the Southern States Energy Board leads several specific successful education and outreach campaigns in management of various projects, SSEB also continues to take seriously its mission of outreach and education related to a number of issues through publications and topical reports, events, conferences, workshops, panel discussions, exhibits, and keynote presentations. Over the past year, SSEB participated in a wide range of activities, including crucial energy conversations with the Council of State Governments and the Southern Legislative Conference. The list of education and outreach activities conducted by SSEB is extensive. In each case, SSEB strives to enhance and improve the understanding and awareness of domestic energy development, energy and environmental policies, and clean energy technologies. Some of the various engagements from the past year are listed below.

## **“SECARB: CCUS as an Emissions Reduction Technology”**

**Power Experts Conference**

## **“SSEB and Southeast Regional Carbon Sequestration Partnership”**

**CO<sub>2</sub>-EOR Carbon Management Workshop**

## **“America’s Energy Renaissance: Fueling Business and Industry Opportunities”**

**West Virginia Economic Development Council**

## **“Economics and Environment Drive Coal Technology Deployment”**

**Virginia Coal and Energy Alliance**

## **“The Future of Electric Power in the South”**

**Georgia Tech University Issues Workshop**

## **“Knowledge sharing visit and tour of Alabama Power’s Plant Barry CO<sub>2</sub> Capture unit and CO<sub>2</sub> storage site”**

**Navajo Nation Exchange**

## **“Strategic Role of States and Sub-National Governments in Progressing CCS / CCUS”**

**Wye River Global CCS Institute Thought Leadership Forum**

## **“Digital Media in State and Tribal Emergency Preparedness and Response”**

**National Transportation Stakeholders Forum**

## **“Back to the Future: What to do with all this CO<sub>2</sub>”**

**International Conference on Clean Coal & Fuel Systems**



**Publications are available at [www.sseb.org](http://www.sseb.org)**

# SOURCES OF SUPPORT

The Southern States Energy Board's (SSEB) primary source of funding comes from annual appropriations from the 18 member states and territories. Each member's share is computed by a formula written into the original compact. This formula is comprised of an equal share, per capita income, and population. The board has not requested an increase in annual appropriations in more than 25 years. The compact authorizes the board to accept funds from any state, federal agency, interstate agency, institution, person, firm, or corporation provided those funds are used for the board's purposes and functions. This year, additional support was received for research projects from grants and cooperative agreements.

Additionally, SSEB continues to lead an associate members program comprised of industry partners who provide an annual contribution to the board. Membership includes organizations from the non-governmental sector, corporations, trade associations, and public advocacy groups. The associate members program provides an opportunity for public officials and industry representatives to exchange ideas, define objectives, and advance energy and environmental planning to improve and enhance the South's economic and environmental well-being.

In addition, the SSEB Carbon Management Program/Southeast Regional Carbon Sequestration Partnership's (SECARB) industry associates and partners provide monetary sponsorships to complement the SECARB Program and its activities. For more information on the SECARB program, please visit [www.secarbon.org](http://www.secarbon.org).

<b>ALABAMA</b>	<b>\$32,572</b>
<b>ARKANSAS</b>	<b>\$31,027</b>
<b>FLORIDA</b>	<b>\$47,212</b>
<b>GEORGIA</b>	<b>\$35,782</b>
<b>KENTUCKY</b>	<b>\$32,197</b>
<b>LOUISIANA</b>	<b>\$33,817</b>
<b>MARYLAND</b>	<b>\$37,192</b>
<b>MISSISSIPPI</b>	<b>\$29,077</b>
<b>MISSOURI</b>	<b>\$36,247</b>
<b>NORTH CAROLINA</b>	<b>\$37,042</b>
<b>OKLAHOMA</b>	<b>\$32,512</b>
<b>PUERTO RICO</b>	<b>\$25,597</b>
<b>SOUTH CAROLINA</b>	<b>\$31,372</b>
<b>TENNESSEE</b>	<b>\$34,267</b>
<b>TEXAS</b>	<b>\$55,402</b>
<b>US VIRGIN ISLANDS</b>	<b>\$25,297</b>
<b>VIRGINIA</b>	<b>\$38,362</b>
<b>WEST VIRGINIA</b>	<b>\$28,732</b>



# SSEB IN PICTURES



Kentucky Representative Rocky Adkins, Mrs. Facemire, Mrs. Kirkendoll, West Virginia Senator Art Kirkendoll, and West Virginia Senator Douglas Facemire.



Alabama Governor Robert Bentley, SSEB Chairman.



Barry Cannada, MBI; Harry Alford, National Black Chamber of Commerce; Karen Harbert, Institute for 21st Century Energy; David Holt, Consumer Energy Alliance; and Roger Bernstein, American Chemistry Council.



Senator Robert Adley of Louisiana.



Lance Brown, Partnership for Affordable Clean Energy; Michelle Freeark, Arizona's G&T Cooperatives; Danny Gray, Charah, Inc.; and Bill Bissett, Kentucky Coal Association.



Puerto Rico Governor Alejandro García Padilla; Kenneth Nemeth, SSEB; and SSEB Federal Representative Jim Powell.



Alabama SSEB members Representative Randy Davis and Senator Cam Ward.



Representative Weldon Watson of Oklahoma.



Senator Bob Rucho (NC), Representative Mike Hager (NC), Mitch Gillespie of NC Department of Environment and Natural Resources, and Senator E. S. (Buck) Newton (NC).

# SSEB IN PICTURES



Virginia Secretary of Natural Resources Doug Domenech, Mississippi Governor Phil Bryant, Alaska Governor Sean Parnell, North Carolina Governor Pat McCrory, and Florida Representative Jose Diaz.



SSEB Federal Representative Jim Powell and Mississippi Governor Phil Bryant, SSEB Chairman.



Senate President Jeff Kessler of West Virginia.



Alabama Representative Howard Sanderford and Kentucky Representative Jim Gooch.



Honorable Trent Lott, Former U.S. Senator of Mississippi and Co-Chairman of the Bipartisan Policy Center's Energy Project.



Senator Terry Burton of Mississippi.



Representative Micky Hammon of Alabama.



Kentucky Governor's Alternate Dr. Len Peters, Secretary of the Kentucky Energy and Environment Cabinet.



Randy Eminger, American Coalition for Clean Coal Electricity.

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